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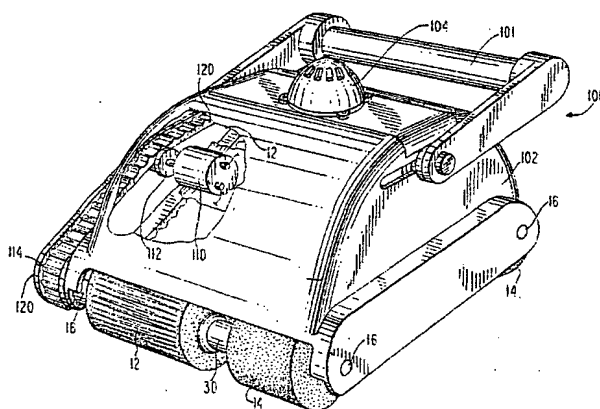
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(54) Title: **DIRECTIONAL CONTROL FOR DUAL BRUSH ROBOTIC POOL CLEANERS**



(57) Abstract: A self-propelled robotic pool cleaner (100) has a first pair of driven brushes (12, 14) and second pair of free brushes co-axially mounted for rotation on axles (16) at the opposite ends of the pool cleaner that are transverse to the direction of movement. The first pair of brushes are mounted on one side and are driven by a drive motor (110); the second pair of brushes are mounted on the opposite side of the cleaner. A rotational delay clutch (30) is co-axially positioned between each pair of the first and second brushes so that reversing the drive motor causes the first pair of driven brushes to temporarily rotate at an angular rotational velocity that is greater than that of the second pair of brushes, thereby pivoting the pool cleaner through a predetermined angular change in direction before the synchronous rotation of the second pair of dual brushes is initiated by the engagement of the clutch. Following each reversal, the pool cleaner moves in a new direction along a generally straight path that is angularly displaced from its prior path. A highly efficient cleaning program permits the use of a battery to power the drive and water pump motors in pool cleaners that ascend the side walls as well as cleaning the bottom surface.

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# INTERNATIONAL SEARCH REPORT

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## A. CLASSIFICATION OF SUBJECT MATTER

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US CL : 15/1.7, 319; 210/169; 700/245; 134/166R, 167R, 168R; 74/810.1; 192/70.11, 48.8, 48.92;

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Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| A, P       | US 2004/0045104 A1 (PICHON) 11 March 2004 (11.03.2004), abstract, figures.         | 1-24                  |
| A          | US 6,309,468 B1 (SOMMER) 30 October 2001 (30.10.2001), column 3 lines 21-35).      | 1-24                  |
| A          | US 6,299,699 B1 (PORAT et al) 09 October 2001 (09.10.2001), see figures.           | 1-24                  |
| A          | US 5,256,207 (SOMMER) 26 October 1993 (26.10.1993), abstract.                      | 1-24                  |

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